

“Garbage on the Green”- A Waste Audit Event at the University of North Florida, March 8, 2007

A Faculty Research Report for the UNF Environmental Center

by

Stacy E. Wheeler
-UNF Environmental Center Fellow-

University of North Florida
Department of Political Science and Public Administration
College of Arts & Sciences

Contact Information
Office: 51-2403
Phone: 620-2289
Email: swheeler@unf.edu

Overview of the Study

Approximately 135 undergraduate students participated in a waste characterization study at the University of North Florida (UNF) on March 8, 2007 that was titled *Garbage on the Green*. The purpose of the study was to identify and quantify the types and sources of materials in UNF's solid waste stream. Findings from the study were used to generate new strategies for improving campus waste management and recycling programs. The study was funded by the Environmental Center and supported by the university administration, the city of Jacksonville, and a diverse group of regional public and private organizations.

Methods: Three Waste Assessment Approaches

As per United States Environmental Protection Agency (U.S. EPA) standards, three waste assessment approaches were used for planning and implementation of the *Garbage on the Green* event. The three approaches include: 1) a facility walk-through, 2) a records examination, and 3) a waste sort (U.S. EPA 1993). See Figure 1 for a description of the strengths and limitations of each approach.

Facility Walk-Through. Starting in November 2006, a facility walk-through was conducted to observe campus waste-generating activities and to identify four campus locations where representative samples of trash and recycling could be collected. The walk-throughs involved *touring* the campus facility (its buildings and grounds) with several representatives from physical facilities and the environmental health and safety team. Notes were made on the size, placement, and contents of trash and recycling containers at different locations, as well as how often the containers were emptied by university employees.

Records Examination (Waste-Hauler Records). Prior to the event, some attempts were made to estimate the total amount of campus waste and recycling generated annually. Typically this is done by examining the university's waste-hauling records and recycling receipts. However, after reviewing the documents and discovering that significant information was unavailable attempts made to calculate the university's annual waste-generation were aborted. Nonetheless, the records examination was useful because several operational and billing inefficiencies were identified, including a contractor who was several years delinquent in paying revenues to the university for corrugated material (cardboard). Other inefficiencies were detected in the waste-hauler's billing records, including those which failed to report the actual weight of trash and recycling removed from campus. In this case, it was recommended that the university renegotiate its solid waste contract so that the waste-hauler would be required to record trash and recycling weights on the university's monthly billing statements. In addition, the UNF recycling staff recognized a need for better recordkeeping, and as a result, they have made significant changes to their recordkeeping system that now include regularly scheduled tracking of material from different parts of campus.

A Waste Sort (by Specific Functional Areas). A waste sort was used to quantify the weight and volume of campus trash and recycling. Because this was the university's first attempt at conducting a waste sort involving the physical collection, sorting, and weighting of representative samples of waste, a significant amount of time and planning (about three months) went towards the implementation of this project.

- ***Obtaining Endorsements and Management Support.*** At the outset of the event, endorsements from the UNF Environmental Center and physical facilities were needed to help establish project credibility. Their support was important to the

success of the event because they *assisted* in many of the tasks involved in planning, designing, and implementing the waste sort. Appendix A documents the university's endorsement and the other community-based letters of support.

- ***Selecting the Timing of the Waste Sort: Seasonality and the Average Day.*** Waste generation can vary significantly from day to day on a college campus, and can affect the accuracy of the data from a waste sort. Professionals in the solid waste and recycling fields have developed several rules of thumb regarding the best times and days to collect samples for a waste sort (See von Kolnitz and Kaplan 2004). The first rule of thumb states that it is best to collect waste generated during a 24 hour period. This practice ensures that the “highs” and “lows” of daily waste-generation on a college campus will be captured. The second rule of thumb is to sample on days that come closest to representing the “average day.” For most U.S. college campuses, the “average day” is considered to be Wednesday. In addition, periodic events such as semester move-ins, homecoming, holiday parties, spring break, and the end-of-the-semester move-outs can affect the quantity of waste generated, so sampling on these days or shortly thereafter should be avoided. Seasonality does have an effect on waste-generation, especially during the winter months (December through February) when people spend more time inside and engage in more waste-generating activities such as eating more canned goods, pre-packaged foods, and “to-go” meals. Similarly, during the summer there are fewer students enrolled in classes and other activities such as student orientation activities, sports camps, and on-site conferences can significantly change the composition of the waste stream. Based on these recommendations, the *Garbage on the Green* waste sort was scheduled in early

March several weeks prior to the university's Spring Break and involved the collection of trash and recycling produced on a Wednesday during a 24 hour period. Additional waste sorts could be conducted during the summer and fall semesters to quantify seasonal variations.

- ***Determining Waste and Recycling Categories Prior to the Waste Sort.*** To organize a waste sort, waste and recycling categories need to be determined ahead of time. Campus waste was classified into five main components: 1) paper, 2) plastic, 3) glass, 4) metal cans and 5) compostable material (i.e., yard trimmings and food scraps). "Paper" was subdivided into three categories: white office paper, mixed paper, and corrugated – based on potential market value. Additional categories were added to the list including food packaging, re-usable items, hazardous waste, and remaining trash. Appendix B contains a list defining each waste category.
- ***Procedures for Conducting the Waste Sort.*** Instructions and reporting forms for the waste sort were adapted from Harvard University's annual waste assessment project (Gogan 2006). The forms provide step-by-step instructions for sorting, weighing, and recording data. See Appendix B for waste sort forms.
- ***Equipment Used at the Waste Sort.*** See Appendix C for a list of equipment.
- ***Health and Safety Measures: Oversight, Training, & Obtaining Informed Consent.*** The university's environmental health and safety team and the General Counsel were consulted at the start of project to address potential liabilities and to discuss safety issues about handling trash, including what types of personal protection equipment (i.e., gloves, coveralls, eye wear) were needed for the waste sort. Our top concerns included minimizing the exposure to and contact with sharp objects (e.g., razor

blades, hypodermic needles and broken glass), blood borne pathogens, and other communicable diseases. As a result, *all volunteers* received training and personal protection equipment and signed a “volunteer acknowledgment and informed consent” form *before* participating in the waste sort. Also, a representative from the environmental health and safety team was present during the event to address potential problems. See Appendix D for the volunteer acknowledgment and informed consent form.

- ***Using “Surrogates” and Three- and Four-Person Teams to Perform Waste Sort.***

Prior to the event great efforts were made to identify a dozen reliable student volunteers that could serve as roving “surrogates” at the time of the waste sort. The surrogates were trained to show other volunteers how to do a waste sort and could address basic questions about the safety and handling of the waste. A month before the event, “waste sorting” invitations were sent to the entire campus in an effort to secure volunteers. On the day of the event 135 volunteers came at different scheduled times throughout the day. Individuals were put into three- or four-person waste sorting teams. Typically individuals within a team would take on a specific task. Two or more team members would sort through the bag. Then one designated team member would weight the material and another designated member would record the measurements. This approach appeared to be the most efficient way to complete the sorting and weighing of a bag.

- ***Calculating the Waste Sort Weights.*** To calculate the *net weight of each waste component*, teams were asked to sort the content of a bag by starting with the first category (e.g., white office paper), placing the sorted material in the bucket, and

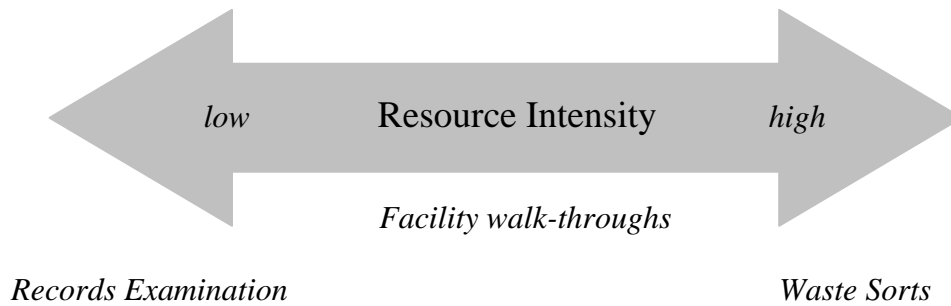
weighing the material with a floor scale. Teams were instructed to log the weight *minus* the weight of the bucket. The second category (e.g., mixed paper) would be sorted next, following the same steps. This procedure would then be repeated until all categories had been sorted, weighed, and recorded. If there were no items in a given category, the teams were instructed to place a zero for the category weight. The recorded weights of each bag were logged into a laptop (by a designated person – Sarah Boren) using the computer software Microsoft Excel and then category weights were totaled. To calculate *percentages of the total sample weight*, the net weight of each waste component was divided by the total weight of all bags and then multiplied by 100.

- ***Estimating Volume.*** Post-sorted material was placed in 60 gallon plastic bags (i.e., container liners) and grouped by categories (i.e., white office paper, mixed paper, plastics, food packaging waste...etc.). Bags completely full were estimated to be approximately 60 gallons. Half full bags were estimated to have the volume of 30 gallons. Bags a quarter full were estimated to have the volume of 15 gallons. To calculate the *total estimated volume*, bags of each waste component were summed together according to their estimated volume.

Some Examples of How to Calculate Estimated Volumes

Waste Component Categories	Reported Observation	Calculation
1. White Office Paper	4 bags completely full	4 x 60 gallons = 240 gal
2. Mixed Paper	7 bags completely full	7 x 60 gallons = 429 gal
3. Metal Cans	1 bag completely full; 1 bag half full	1 x 60 gallons + 1 x 30 gallons = 90 gal
4. Glass Bottles	1 bag three-fourth full (0.75 x 60 gallons = 45 gal)	1 x 45 gallons = 45 gal

Figure 1. Three Most Common Waste Assessment Approaches



Approaches

Strengths & Limitations

1. Facility walk-throughs

Strengths:

- Allows first-hand examination of the university's operations.
- Detects inefficiencies in the way waste moves through campus.
- Identifies existing space and equipment (e.g., containers, vehicles, and balers) and assesses how these items are used for storage, processing recyclables, and other activities.
- Provides opportunities to collect additional waste and recycling information through interviews with custodial staff and students.

Limitation:

- Does not provide quantitative information about the waste stream.

2. Records Examination

Strengths:

- Typically provides weights and volumes of waste generated on campus.
- Often requires less time and effort than other waste assessment approaches.
- Identifies the most expensive or valuable components of the university's waste.

Limitations:

- Might not provide quantitative data about specific waste components.
- Does not provide qualitative data on how and why wastes are generated.

3. Waste Sorts

Strengths:

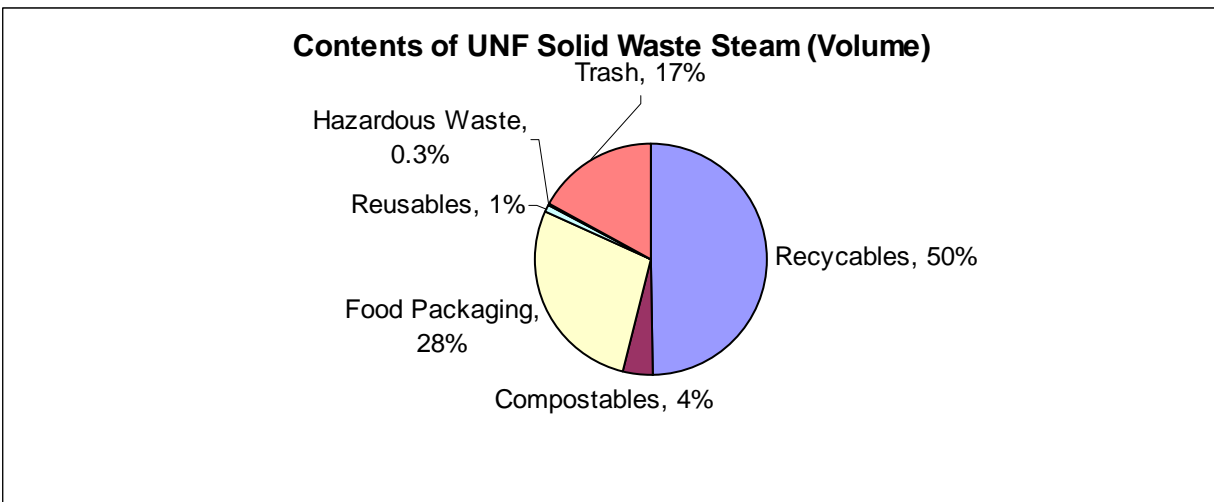
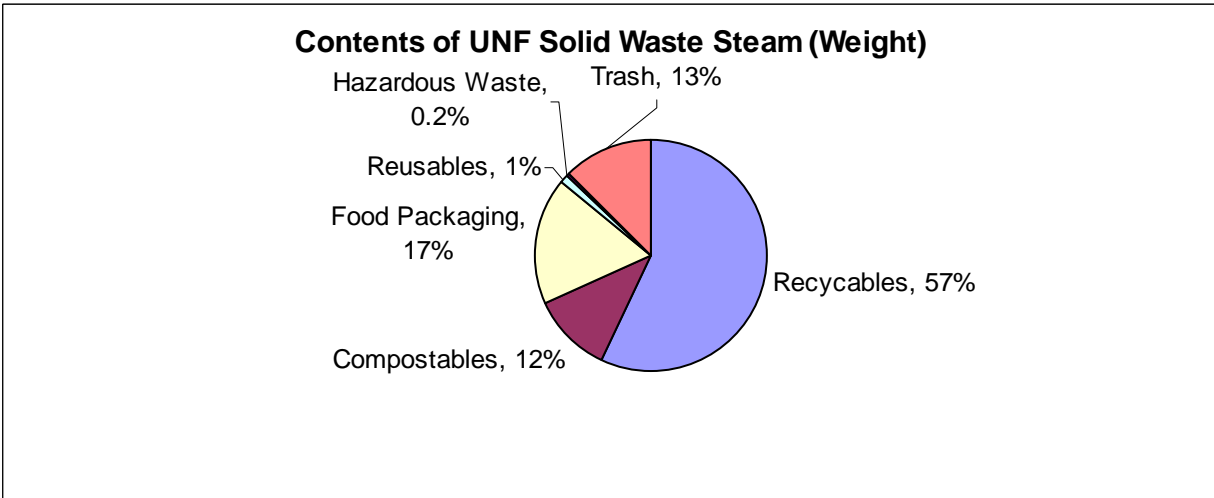
- Provides quantitative data on total waste generation & specific waste components.

Limitation:

- Requires more time and effort than other approaches. Specifically requires multiple staff and resources – plus a significant workspace.

Adapted from U.S. EPA, WasteWise Program (*personal communications*, Janice L. Sims, 2007)

Figure 2. Materials in UNF Waste Stream (Before Recycling) at Four Locations during a 24 hour period – by weight (pounds) and volume (gallons).



Includes waste and recycling from four UNF locations during a 24 hour period, March 6, 2007: Building #42 (Academic), Building #51 (Academic), Osprey Hall (Residential), and Alumni Courtyard (Outside food court).

* Does not include weights from designated cardboard dumpsters near the four locations.

Findings: Reporting of the Waste Assessment Data and Results

Description of the Samples Taken for the Waste Sort. Within a 24-hour period 144 bags of material were collected from the four targeted locations: 1) Academic Building #42-Coggin Business School, 2) Academic Building #51-Social Sciences, 3) Osprey Residence Hall, and 4) the Alumni Café outdoor food court area. Collectively the bags weighed 853 pounds (0.43 tons) and had a volume of 7133 gallons (41.1 cubic yards). There were 120 bags from trash containers and 24 bags from recycling containers. The Alumni Café food court area generated the most trash bags (51 partially and completely full bags). See Table 1.

Materials found in the UNF Waste Stream at the Four Locations. The UNF waste stream is made up of the things that faculty, staff, and students commonly use and then throw away: *paper, food packaging, and plastic beverage containers*. Most of the campus waste stream consisted of paper products, nearly 40 percent by weight (335 pounds) and 30 percent by volume (840 gallons). “Mixed paper” made up approximately two-thirds of the paper waste while the more marketable “white office paper” made up only a quarter. The second largest portion of the waste stream came from bulky food packaging items, accounting for 17 percent by weight (149 pounds) and 28 percent by volume (780 gallons). Plastic beverage containers (plastics #1 and #2) made up the third largest segment, which amounted to 13 percent by weight (111 pounds) and 15 percent by volume (420 gallons).

While paper made up the largest portion of waste generated, only 38 percent (127 pounds) of it was diverted from the landfill (i.e., recycled/recovered). Forty-one percent of the plastic beverage containers, mostly from soft drink and water bottles, were recovered. The recovery of metal cans and glass bottles were comparatively low at 23 percent (3.7 pounds) and 17 percent (5.2 pounds) respectively. Overall, the current diversion rate at UNF appears to be

about 21 percent. The generation and recovery of materials in the UNF waste stream, by weight and recovery as a percent of generation, is shown in Table 2.

The content of the waste stream differed by location. Waste generated in the academic buildings contained mostly paper waste – about two-thirds. Nearly half of the waste generated at the Alumni Café food court area consisted of food packaging and compostable materials, and 60 percent of the waste generated at the Osprey Residence Hall contained plastic beverage containers, food packaging, and trash (i.e., non-recyclable/non-compostable items). Overall, the highest recovery rates were achieved at the academic buildings through a paper recycling program that is used mostly by faculty and staff. The residence hall and food court area had the lowest recovery rates (15 percent and 8 percent respectively). The generation and recovery of materials by location are shown in Table 3.

Table 1. Number of Bags Collected at Four UNF Locations during a 24-hour period for the Waste Sort.

	Building #42 (Academic)	Building #51 (Academic)	Osprey Hall (Residential)	Alumni Cafe (Outside food court)
# of Bags from Trash Containers*	26	16	27	51
# of Bags from Recycling Containers*	5	5	8	6
Total # of Bags	31	21	35	57

Includes waste and recycling from four UNF locations during a 24 hour period, March 6, 2007: Building #42 (Academic), Building #51 (Academic), Osprey Hall (Residential), and Alumni Courtyard (Outside food court).

* Some of the trash and recycling bags were partially full while others were completely full bags. Loose recyclables (not bagged but in recycling carts) were placed in 60-gallon plastic bags.

Table 2. UNF Waste Generation and Recycling Recovery of Material

	Weight (lbs) Generated	Weight (lbs) Recovered	Recovery as a Percent of Generation
Paper (Total)	334.7	127.2	38%
White office paper	88.3	29.0	32 %
Mixed paper	227.7	93.8	41%
Corrugated (cardboard)*	18.7	4.4	23%
Plastics (#1 & #2)	111.3	45.5	41%
Metal cans	16.1	3.7	23%
Glass bottles	29.7	5.2	17%
Compostable materials	98.5	-----	-----
Food packaging	148.5	-----	-----
Reusable items	12.7	-----	-----
Hazardous waste	1.6	-----	-----
Remaining trash	83.9	-----	-----
Total waste stream (representative samples)**	853	182	21%

Includes waste and recycling from four UNF locations during a 24 hour period, March 6, 2007: Building #42 (Academic), Building #51 (Academic), Osprey Hall (Residential), and Alumni Courtyard (Outside food court).

* Does not include weights from designated cardboard dumpsters near the four locations.

** Includes an additional 15.8 pounds for the weight of the 144 bag liners (wet). The average weight of a bag liner (wet) weighed a little more than a tenth of a pound. $144 \text{ bags (wet)} \times 0.11 = 15.8 \text{ pounds}$

Table 3. By Location, Recycling Recovery of Material at UNF

<i>LBS Recovered/ Total LBS Percent Recovered</i>	Building #42 (Academic)	Building #51 (Academic)	Osprey Hall (Residential)	Alumni Cafe (Outside food court)
Paper (Total)	53.6/ 133.0 lbs 40.3%	66.2/ 147.4 lbs 44.9%	0.5/ 13.8 lbs 3.6%	6.9/ 38.7 lbs 17.8%
White office paper	20.1/ 34.5 lbs 58.3%	8.6/ 42.0 lbs 20.5%	0/ 2.6 lbs 0%	0.3/ 7.4 lbs 4.0%
Mixed paper	31.1/ 89.4 lbs 34.8%	55.7/ 100.3 lbs 55.5%	0.5/ 10.4 lbs 4.8%	6.5/ 27.6 lbs 23.6%
Corrugated (cardboard)*	2.4/ 9.07 lbs 26.5%	1.9/ 5.1 lbs 37.3%	0/ 0.8 lbs 0%	0.1/ 3.7 lbs 2.7%
Plastics (#1 & #2)	10.2/ 42.2 lbs 42.1%	5.7/ 18.2 lbs 31.4%	22.3/ 35.2 lbs 63.4%	7.3/ 33.7 lbs 21.7%
Metal cans	0.3/ 3.83 lbs 7.83%	0.5/ 3.9 lbs 12.8%	0.7/ 3.2 lbs 21.9%	2.2/ 5.2 lbs 42.3%
Glass bottles	2.0/ 7.4 lbs 27.0%	1.2/ 4.4 lbs 27.3%	0/ 5.6 lbs 0%	2.0/ 12.3 lbs 16.3%
Weight of Waste Stream	218 lbs	254 lbs	160 lbs	222 lbs
Weight Recovered	61.1 lbs	73.6 lbs	23.5 lbs	18.4 lbs
Recovery as a Percent of the Waste Stream	30%	29%	15%	8%

Includes waste and recycling from four UNF locations during a 24 hour period, March 6, 2007: Building #42 (Academic), Building #51 (Academic), Osprey Hall (Residential), and Alumni Courtyard (Outside food court).

* Does not include weights from designated cardboard dumpsters near the four locations.

Table 4. By Location, Estimated Waste Generation in Tons at UNF

	Building #42 (Academic)	Building #51 (Academic)	Osprey Hall (Residential)	Alumni Cafe (Outside food court)
Waste Generation, 24 hours (baseline, waste sort)*	(218 lbs) 0.109 tons	(253 lbs) 0.127 tons	(160 lbs) 0.080 tons	(222 lbs) 0.111 tons
Estimated Waste Generation per semester, 80 days**	8.6 tons	10.1 tons	6.4 tons	8.9 tons
Estimated Waste Generation fall/spring semesters, 160 days	17.3 tons	20.3 tons	12.8 tons	17.8 tons
Estimated Waste Generation summer session, 60 days***	3.3 tons	3.8 tons	2.4 tons	3.3 tons
Estimated Waste Generation for a 12-month academic calendar year****	20.6 tons	24.1 tons	15.3 tons	21.1 tons

Includes waste and recycling from four UNF locations during a 24 hour period, March 6, 2007: Building #42 (Academic), Building #51 (Academic), Osprey Hall (Residential), and Alumni Courtyard (Outside food court).

* Does not include weights from designated cardboard dumpsters near the four locations.

** UNF uses a semester schedule that typically meets for 16 weeks. An academic week typically meets for 5 days.
16 weeks x 5 days per week = 80 days per semester

*** UNF has a 12-week summer session. 12 weeks x 5 days per week = 60 days. It is estimated that the summer session will produce about half the amount of trash when compared to a fall/spring semester – and this is reflected in the summer session calculations.

**** The estimated waste generation for a 12-month academic calendar year does not include the semester move-in periods and the end of the semester move-outs, which produce extreme amounts of trash and recycling. In fact, the waste generation at a single residence hall can have an additional 7 tons of waste generated during move-out periods.

Recommendations

This study documents the waste reduction and recycling efforts at UNF and finds evidence to support the conclusion that the university's current recycling and waste management programs do not meet the "solid waste reduction" objectives in the UNF Campus Master Plan and the Florida Resource Recovery law. The UNF Campus Master Plan states that:

"UNF shall *reduce* the solid waste stream from the University operations to the *greatest practical extent*" through "*periodic educational emphases* for the student and employee bodies" (Section 13, Policy Objective 4.2).

Similarly, the Florida Resource Recovery law calls for the State University System to establish and implement "*a solid waste reduction program...designed and implemented to achieve the maximum feasible reduction of solid waste generated...*" The law also calls for the State University System "to *evaluate* the amount of recyclable material recycled and *make all necessary modifications* to ensure that *all recyclable materials are effectively and practicably recycled*" (Title XXIX, Chapter 403, Part IV, 403.714(1)(c-d)(5)(a)).

The waste sort findings show that UNF's current recycling and waste management programs are only recovering about one-third of the recyclables from the waste stream. The findings also indicate that a good source reduction (i.e., waste prevention) program could easily decrease the waste generated at UNF by 30 percent. The addition of a composting program on campus would further reduce campus waste. Overall 70 percent of the waste generated at UNF has the potential to be recovered and/or eliminated from the waste stream.

At present, UNF's diversion rate is about 21 percent. Waste studies conducted across the county in 1991 reported that the average diversion rate on a college campus was about 20 percent (DeBell 1994). More recent studies show that the trend nationally has been to institutionalize

recycling into larger solid waste management departments and even larger campus-wide sustainability programs. Thus, many schools are joining national sustainability programs (e.g., [EPA-WasteWise](#), [AASHE-STARs program](#), and [the Presidents Climate Commitment](#)) that see waste reduction and recycling practices as part of the solution towards addressing global warming and the reduction of greenhouse gas emissions. As a result, U.S. colleges and universities have raised the average diversion rate to almost 30 percent over the last decade. Furthermore, there are a growing number of colleges and universities that can boast diversion rates of 45 percent or higher because they recycle nearly half of their waste (CURC 2007).

UNF has taken steps in the right direction in the past year to remedy some of its solid waste management and recycling deficiencies including: 1) resolving some of its waste management billing and material tracking issues; 2) re-organizing its solid waste division to include the recycling program; 3) purchasing additional recycling containers, and 4) supporting the future development of the *Garbage on the Green event*. However, UNF should strongly consider implementing the following recommendations made from the waste sort findings.

- 1. UNF needs to establish a formal solid waste reduction program.** It is time for UNF to design and implement a comprehensive waste management plan that identifies potential waste reduction options for the entire campus. A formal waste reduction program prevents and decreases the amount of waste being generated through waste prevention, recycling, and composting programs (U.S. EPA 1993, p. 32). The best approach to managing campus waste is to avoid creating it in the first place. However, once waste is created recycling and composting programs are the most effective methods of reducing waste-generation (U.S. EPA 1993, pg. 1-6). The proposed solid waste reduction program

should set preliminary and long-term goals, which can be promoted throughout the year to UNF's student body and employees.

2. ***UNF needs to create a committee to oversee the design, implementation, and evaluation of its solid waste reduction program.*** It is recommended that the committee should consist of the following individuals (or some variation of this list): 1) the Assistant VP of Administration and Finance, 2) the Director of Housing Operations, 3) a representative from Residence Life, 4) Dining Services Regional Manager and/or the Director of Operations, 5) a representative from the Environmental Health and Safety, 6) the Associate Director of Physical Facilities, 7) the Building Services Superintendent, 8) the Recycling Superintendent, 9) the Director of the Environmental Center, and 10) a representative from the Office of Academic Affairs. It is recommended that the committee report all "committee work" directly to the VP of Administration and Finance and the University President. It is recommended that the committee should regularly meet to carryout the following responsibilities:

- a. Setting preliminary and long-term goals of the waste reduction program using as guidelines the UNF Campus Master Plan, the Florida Resource Recovery law, and other related federal, state, and local environmental regulations;
- b. Gathering and analyzing information relevant to the goals and implementation of the waste reduction program;
- c. Monitoring and evaluating the progress of the waste reduction program in order to make necessary adjustments and to ensure that "*all recyclable materials are effectively and practicably recycled*" and that UNF's solid waste reduction

program is designed and implemented “*to achieve the maximum feasible reduction of solid waste generated*” on campus.

d. Reporting twice a year to the campus community (i.e., the student body and employees) the status of the waste reduction program including: *i.*) the progress made towards achieving waste reduction goals, *ii.*) all programmatic challenges/barriers, and *iii.*) the total amount of waste generated and recovered for the semester and the 12-month academic calendar year, by specific functional areas (e.g., academic buildings, residence halls, dining services, and other auxiliary services).

3. UNF needs to dedicate resources to “brand” its solid waste reduction program. To effectively implement the solid waste reduction program, it is essential that the university’s student body and employees are informed about the program and the importance of their cooperation and involvement. It is recommended that a coordinated and consistent educational campaign message is designed and implemented through the use of a waste reduction logo, tagline and a summary statement of program goals. Most schools with a solid waste reduction program dedicate a staff person to manage the educational campaign.

4. The waste reduction committee needs to target first the three most common waste items: paper products, food packaging and plastic beverage containers. While there are many materials that can be recovered from the waste stream, the committee should identify the specific locations where large amounts of paper, food packaging, and plastic beverage containers are being generated on campus and set realistic goals and marketing strategies for reducing these items.

Conclusion

Until now, information about campus waste generation at UNF has been largely uninvestigated. As a result, the university's recycling program has struggled because it has lacked the information needed to sustain any type of on-going educational campaign that promotes waste reduction and recycling. This is unfortunate since there are local and regional needs for such programs. This is evidenced by the \$1.5 million spent annually by the city and state to clean up improperly disposed litter and recyclables from Jacksonville's roadways, parks, beaches, and rivers (JCCI 2002). Dealing with waste management issues will present many important challenges for UNF in the coming years. However, the university is uniquely positioned to provide academic and research opportunities to its students, faculty, and staff concerning these problems.

- Students can become more knowledgeable about the way in which the university and the region are affected by different waste management problems.
- Faculty and students can collaborate on research projects outside of the classroom and involve community partnerships that focus on litter prevent and waste reduction issues.
- The university community can take a leadership role in designing, initiating, implementing, and assessing how best to *reduce, reuse, and recycle* at a local and regional scale.

Following the recommendations contained in this report will enable the university to continue making progress toward the goals of ensuring that UNF achieves the "*maximum feasible reduction of solid waste generated*" on campus and a sustainable future for itself.

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Appendix A: Endorsements and Letters of Support

- President John Delaney, University of North Florida
- Brian Wormwood, Assistant Director, Physical Plant, University of Central Florida
- John Shellhorn, Director of Keep Jacksonville Beautiful, City of Jacksonville, Florida
- Aaron Gottlieb, Owner, Native Sun Natural Food Market
- Andy Fairbanks, Collegiate Committee Chair, Recycle Florida Today, Inc.
- Sarah Boren, Executive Director, Green Team Project, Inc.
- Ray Bowman, Director, Environmental Center, University of North Florida



UNIVERSITY of
NORTH FLORIDA

Memorandum

February 23, 2007

To: The University's Faculty, ~~Staff and Students~~
From: John Delaney, President ~~Signature removed~~
Re: March 8, 2007 – *Garbage on the Green Event*

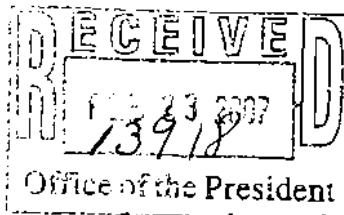
As President of the University of North Florida, I want to extend my utmost support to the *Garbage on the Green* event sponsored by the university administration, UNF Environmental Center, Physical Facilities, Housing, the Student Government Association, and the Environmental Health and Safety Department.

Representatives of governmental agencies, businesses, and non-profit organizations are demonstrating their leadership in implementing innovative solid waste management and recycling efforts during the event. The *Garbage on the Green* event will provide opportunities for the university to build a strong foundation with these representatives for the future development of campus recycling operations.

The University of North Florida has had a formal recycling program since the late 1980s. Our program has demonstrated a continued commitment to the State's green initiatives of reducing, reusing and recycling through the recent construction of campus LEED buildings. Further support may include opportunities to integrate more waste reduction practices on campus as the university transitions from a commuter campus to a traditional residential campus of approximately 25,000 students by the year 2020.

We are pleased that the City of Jacksonville and a variety of different community organizations are able to provide both financial and in-kind support for the university's first campus waste prevention/recycling event. I hope the *Garbage on the Green* event will offer the opportunity to establish long-term relationships with these environmental leaders and community partners.

cc: Richard Crosby



Office of the Director

*To President Delaney on 2/23/07.
Copies to Stacy Wheeler, Abby Murphy
and office files on 2/23/07*
Signature removed

February 16, 2007

Mr. John Delaney, President
Office of the President
University of North Florida
c/o UNF Environmental Center
Department of Chemistry and Physics
Jacksonville, FL 32224

Dear Mr. Delaney:

Please allow me to express my support of Ms. Stacy Wheeler and the University of North Florida (UNF) in your upcoming event "Garbage on the Green," Clean it Up and Green it Up, to be held on March 8, 2007. I think it is a great event to engage your campus in the recycling efforts we are all putting forth here in the state of Florida. The idea of a waste audit is great it should provide a lot of fun as well as engage students, faculty and staff in what actually goes out in the solid waste stream each day from your school.

My understanding is that, on average, sixty percent of all waste is actually recyclable material. I know here at the University of Central Florida we are working to increase our educational efforts on the issues surrounding our recycling and solid waste stream in an effort to get everyone involved. UNF is fortunate to have staff that will participate and engage your community in this event, I am sure the results will be of great value as you all set your recycling course over the upcoming year.

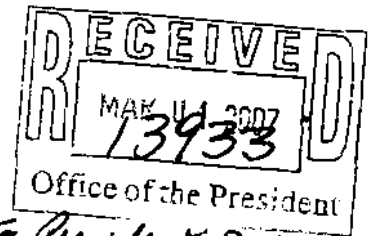
I look forward to hearing more of the event, seeing the results of the audit and if I can ever be of service to you and UNF, please do not hesitate to call upon me.

Sincerely,

Signature removed

Brian H. Wormwood
Assistant Director, Physical Plant
University of Central Florida

ENVIRONMENTAL RESOURCE MANAGEMENT DEPARTMENT



February 14, 2007

John Delaney, President
University of North Florida
c/o UNF Environmental Center
Department of Chemistry and Physics
Jacksonville, FL 32224

*To President Delaney with
Copies to Stacy Wheeler,
Abby Murphy and
office files on 3/1/07.*
Signature removed

Dear President Delaney;

On behalf of the City of Jacksonville and the Keep Jacksonville Beautiful Commission, I would like to express appreciation for sponsoring the "Garbage on the Green" event scheduled for Thursday, March 8, 2007.

The event is aimed at conducting a campus cleanup, enhancing awareness of litter issues and the university's waste management and recycling program and building a support base for waste reduction efforts. Information gained through an audit of waste collected will aid in effectively identifying waste sources and in integrating effective waste management practices.

The support for events of this type by the university, its staff and student body plays an important role in communicating to our entire community the need for a collective commitment to protecting our environment. We are pleased to partner with UNF in this special event and thank you for your continued leadership and support.

Sincerely,

Signature removed

✓ John M. Shellhorn
Clean It Up, Green It Up
Keep Jacksonville Beautiful Commission



11030 Baymeadows Road Jacksonville, FL 32256 (904) 260-2791

=====

February 14, 2007

John Delaney
President
Office of the President
University of North Florida
c/o UNF Environmental Center
Department of Chemistry and Physics
4567 Saint Johns Bluff Road
Jacksonville, FL 32224

Dear President Delaney:

Native Sun Natural Foods Market would like to take this opportunity to commend University of North Florida's (UNF) upcoming "Garbage on the Green" project. This creative environmental education event is an outstanding method to promote awareness to solid waste issues.

As students, faculty, staff and the public join your efforts on March 8, 2007, their awareness will be heightened of UNF's waste management and recycling program. Through your interactive effort, you will be able to address ways to reduce campus trash and promote the change in behavior to include reducing, reusing and recycling.

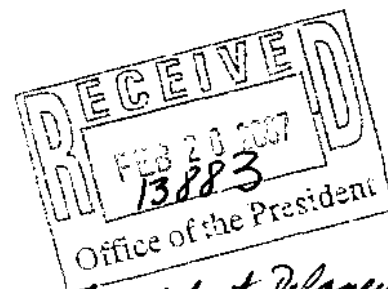
Native Sun is proud to support "Garbage on the Green." Anything that can be done to provide opportunities to integrate more waste reduction practices benefits each of us as individuals and as a community.

To show support, Native Sun is pleased to provide lunch, beverages and snacks for participants. Should you have any questions, please do not hesitate to contact Naomi Teten, Project Coordinator, or myself at (904) 260-2791.

Respectfully submitted:

Signature removed

Aaron Gottlieb
Owner



To President Delaney,
Stacy Wheeler, Robby
Murphy and office
file on 2/20/07.
Signature removed



Mr. John Delaney, President
Office of the President
University of North Florida
4567 St. Johns Bluff Road, South
c/o UNF Environmental Center
Department of Chemistry and Physics
Jacksonville, FL 32224

February 14, 2007

President Delaney,

On behalf of Recycle Florida Today (RFT), I wish to express our support for the University of North Florida's "Garbage on the Green" event, scheduled for March 8, 2007. Having recently initiated a Collegiate Committee to promote and facilitate campus waste reduction efforts, it is a pleasure to receive this kind of response by UNF and support from the Jacksonville community. Furthermore, Stacy Edmonds Wheeler's participation as a representative from UNF has been invaluable to RFT's collegiate outreach.

We are particularly impressed that UNF is sponsoring a cleanup and a public waste audit because both events provide the campus with an opportunity to evaluate their current practices and to start planning for improvement. While most of us *believe* that we generally participate in waste reduction, reuse, and recycling programs – a waste audit can actually *measure* performance in terms of volume and mass.

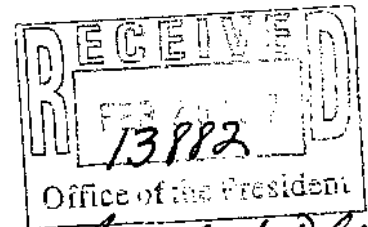
We at RFT look forward to the results of the "Garbage on the Green" event and UNF's subsequent plans to minimize its waste stream. We hope that UNF continues to support waste reduction and recycling, and provides an example of leadership through action for the community and other institutions throughout the state.

Sincerely,

Signature removed

Andy Fairbanks, Collegiate Committee Chair
Recycle Florida Today

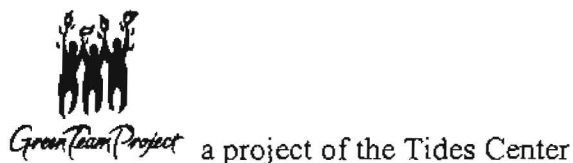
PS – as an alum of UNF, and possibly the school's first "environmental studies" major (through the Liberal Studies program), I am proud to see that the Environmental Center has opened its doors and is supporting environmental efforts on campus and in the community.



*To President Delaney
and copies to Stacy
Wheeler and office files
2/20/07.*

*Also copied: Abby Murphy
at the UNF Environmental
Center.*

Recycle Florida Today, Inc.,
P.O. Box 15889, Tallahassee, FL 32317
Phone: 850-907-1278, Fax: 850-386-4321
Email: info@recyclefloridatoday.org
URL: <http://www.recyclefloridatoday.org>



Green Team Project
c/o Small Business Center
5000-3 Norwood Avenue, Jacksonville, FL 32208
Tel: 904-924-1100 ext. 234, Fax: 904-765-8966
E-mail: greenteamproject@earthlink.net
Website: www.greenteamproject.org

January 8, 2007

Mr. John Delaney
President, Office of the President
University of North Florida
c/o UNF Environmental Center
Department of Chemistry and Physics
Jacksonville, FL 32224

Dear Mr. Delaney --

The Green Team Project would like to applaud the University of North Florida for taking the initiative to perform a rigorous waste audit and to host "Garbage on the Green," the creative environmental education event that will bring solid waste issues front and center for students, faculty, staff and the public on March 8, 2007.

The key to effective environmental stewardship is accurate measurement of an issue, careful crafting and implementation of a comprehensive plan, and a solid education campaign geared to different audiences. UNF should be commended for taking the first steps necessary to obtain baseline numbers of its solid waste and heightening awareness of its current waste management and recycling programs. Garbage on the Green will also be a valuable visual event that will introduce ways to reduce, reuse and recycle campus trash. With such a launch, UNF will be able to build a larger support base for local and regional recycling and waste reduction programs as well as create momentum that attracts other local institutions and organizations to follow its example. This effort is in addition a nice complement to UNF's green building initiatives.

We are proud to support, sponsor and participate in these efforts of UNF and look forward to see them expand and repeated annually.

Sincerely,

Signature removed

Sarah Boren
Executive Director



Environmental Center

UNIVERSITY of
NORTH FLORIDA

February 10, 2007

Executive Board

Ray Bowman, Ph.D.
Arts & Sciences
Jace Hargis, Ph.D.
Education
Christopher Johnson, Ph.D.
Business
David Lambert, Ph.D.
Computing, Engineering &
Construction
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Health

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Ryan Meyer
Student Affairs

Student Members

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Cheryl Pakidis
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Business
Robert Richardson
Computing, Engineering &
Construction
Cindy Twiss
Health

Executive Assistant

Abby Howard Murphy

Ms. Stacy Wheeler
University of North Florida
4567 St. Johns Bluff Road, South
Jacksonville, Florida 32224

Dear Stacy,

The Environmental Center and its Board are extremely pleased that you are representing us as the leader of the **Garbage on the Green** event planned for **March 8th**.

This hands-on-venue will increase awareness around solid waste, recycling and environmental issues both here on campus and in our community. You have been inordinately successful in enlisting the enthusiastic participation from governmental agencies, business people and non-profit entities to make this an educational event.

We are especially grateful to you for stimulating partnerships across the university with our Physical Facilities recycling teams, Student Government, Risk and Safety and several colleges. Through your efforts and those of Abby Murphy, over 100 students have volunteered to participate. Biology and English, students have volunteered to participate in the waste audit. Art students will be creating sculptures. Photography students are assisting in documenting the event. Political science students are helping to organize volunteers. Engineering students are showing off alternative energy projects. Fraternities are lending their muscle-power.

We look forward to your final report of the event. We hope that it will lead to significant advancements in recycling at UNF. If successful the **Garbage on the Green** event could lead to sponsorship of UNF's entry into the national intercollegiate competition for **Recyclemania** in Spring, 2008.

Regards,
Signature removed

Ray Bowman, Ph.D.
Director

Cc: President Delaney

Appendix B: Waste Sort Forms

- Waste Audit Procedure – Instructions for Conducting Waste Audit (Adapted from Harvard University – Green Campus Initiative)
- Bag Audit Form – Used for Recording Waste/Recycling Data (Adapted from Harvard University – Green Campus Initiative)

Waste Audit Procedure

First Annual University of North Florida Waste Audit

Thursday, March 8, 2007

10:30AM -- 4:30PM

SAFETY FIRST!

Inspect all items carefully before handling. Be especially careful not to handle broken glass or anything sharp. If you see anything looking vaguely like a hypodermic syringe, stop sorting that bag and let the UNF event coordinators and staff know right away!

A NOTE ON PRIVACY...Discretely look away...

While it's likely that you may read what is written on papers tossed into the trash, we don't have the author's consent to read it. Remember what Grandma said you should do if your eyes happen to fall on mail that isn't addressed to you: "Discretely look away, dear."

Found Money/Coins

All money found must go into the Community Jar - e/o Stacy Wheeler Party Fund!

Wash Hands...

Make sure to wash your hands thoroughly with soap and hot water after you leave the waste audit site.

1. Put your name(s) on top of each form and fill in the name of your class/organization.
2. Each bag audited will have a color painted on it. The color of the paint will tell you the origin of the bag. Enter bag location on the form. (NOTE: Bags that are marked also "green" came from recycling containers and NOT garbage containers).
3. There are four piles of bags. Select a bag from the pile designated to you by the event coordinator.
4. Weigh the bag and record the total weight on the top of the form. (NOTE: Record weight to the nearest tenth of a pound for example, 1.0 pound, 12.7 pounds, 102.9 pounds).
5. Place bag on sorting table. Untie bag or rip open if necessary. If any hazardous, putrescent (i.e. smelly) or infectious waste is present, set bag aside, re-close, and tell the event coordinator/staff: "It is a "Dirty Bag".
6. Sort content of bag by the first category - white office paper. Place the white office paper into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in "White Office Paper" recycling bin.
7. Sort content of bag by the next category - mixed paper. Place the mixed paper into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in "Mixed Paper" recycling bin.
8. Sort content of bag by the next category - corrugated cardboard. Place the cardboard directly on scale. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Flatten cardboard and place it next to the "White Office Paper" recycling bin.
9. Sort content of bag by the next category - metal cans. Place the cans into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in "Metal Cans" recycling bin.

(OVER →)

10. Sort content of bag by the next category – glass bottles. Place the glass into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in “Glass” recycling bin.
11. Sort content of bag by the next category – plastics #1 & #2. Place the plastics #1 & #2 into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in “Plastics #1 & #2” recycling bin.
12. Sort content of bag by the next category – compost materials. Place the compost material into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in “Compost” bin.
13. Sort content of bag by the next category – food packaging. Place food packaging into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Record the total number of packaging items by food vendor. Place in “Food Packaging” bin.
14. Sort content of bag by the next category – reusables/donatable items. Place reusable into bucket and/or directly on scale. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in “Reusable” bin.
15. Sort content of bag by the next category – hazardous waste. Place waste classified as “hazardous” (meaning that it should not go to the landfill) into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place in “Hazardous Waste” bin.
16. Place the remaining items into bucket – “remaining trash”. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for category weight. Place the remaining trash in bin marked “Trash”.
17. Last step – take your calculator and add up all the weights in each of the categories. Record total weight at the bottom of page. Your “total weight” number should agree with your “total bag weight” that you recorded at the top of the form.
18. Give the completed form to Sarah Boren sitting at the laptop computer. Grab a new waste audit form to fill out and start again at step #1.



Wash Hands...

Make sure to wash your hands thoroughly with soap and hot water after you leave the waste audit site.

Check-out by the Check-in booth when you leave!!!

GENERAL INFORMATION

Student(s) name: _____ Class/Organization Name: _____

Bag location (check ONE building): ☐ #42 Business Admin ☐ Courtyard ☐ Osprey Hall ☐ #51 Social SciencesContainer bag came from (check ONE): ☐ Recycling container ☐ Garbage containerTotal weight of bag:  Weight: _____ (pounds) **SEPARATION CATEGORIES****WHITE OFFICE PAPER** _____ (pounds)**OK** – printed white office paper (color ink OK)**NO** – glossy paper, magazines, journals, colored paper, envelopes, newspaper, brochures, post-its, food paper (cups or wrappers), personal hygiene material (napkins, tissues, paper towels), etc.**MIXED PAPER** _____ (pounds)**OK** – notebooks, notepads, backing to pads, glossy paper, magazines, journals, shoe/shirt boxes, cereal boxes, chip/paper board, tinted/paper with color, envelopes, newspaper, file folders, old textbooks, brochures, post-its, etc.**NO** – white office paper, cardboard, carbon paper, food paper (cups, wrappers, pizza boxes), used personal hygiene material (napkins, tissues, paper towels), etc.**CORROGATED CARDBOARD** _____ (pounds)**OK** – cardboard with wavy material in it (Ex: shipping boxes)**NO** – shoe/dress boxes, waxy material, cereal boxes, paper or toilet paper rolls, pizza boxes, etc.**METAL CANS** _____ (pounds)**OK** – aluminum cans, tin cans, steel cans (labels OK)**NO** – aluminum foil, take out containers, paint cans, stain cans, aerosol cans, etc.**GLASS BOTTLES** _____ (pounds)**OK** – all colors of glass bottles**NO** – mirrors, light bulbs, containers of chemical substances, vases, broken glass**PLASTICS (#1 & #2 ONLY)** _____ (pounds)**OK** – #1 and #2 plastics bottles and jugs (Ex: water & soda bottles, milk jugs)**NO** – #3-#9 plastics, plastic tops, film plastic, transparencies, plastic wrap, take out containers**COMPOST MATERIALS** _____ (pounds)**OK** – leaves, food, organics, napkins, wood, houseplants, potting soil, etc.**NO** – recyclables listed above**FOOD PACKAGING** _____ (pounds)**OK** – beverage containers (paper, styrofoam & plastic cups), pizza boxes, straws, aluminum foil, condiments, plastic wrappers, plastic food containers #3-#9, frozen food packaging, fast food packaging, plastic utensils, wrappers, carry out/plastic food bags**Total number of packaging items from:** OutTakes _____, Wackadoos _____, Starbucks _____, Sbarros Pizza _____,

Alumni Cafe (Freshen's Smoothies and Sushi) _____, Off Campus Restaurants _____

NO – Recyclables**REUSABLES / DONATABLE ITEMS** _____ (pounds)**OK** – gently loved clothing, dishware, paper/boxer clips, file folders, current textbooks, 3-ring binders.

other items (Describe: _____)

NO – seriously abused items**HAZARDOUS WASTE** (both material and container) _____ (pounds)**OK** – rechargeable batteries, laptop/button batteries, computer monitors/terminals, CPUs, keyboards, TVs, printers, scanners, stereos, radios, VCRs, DVDs, camcorders, desk/mobile phones, pagers, power tools, *small* kitchen appliances (microwaves, toaster ovens), health/beauty appliances, paint, paint thinners/strippers, photographic chemicals, thermometers & thermostats, drain cleaners, pool chemicals, aerosol cans, pesticides, antifreeze, fertilizer, acids, gun powder, ammunition & fireworks**NO** – big appliances, regular batteries (e.g., AA, AAA, DD, CC – they go in trash)**REMAINING TRASH** (Non-recyclables, non-compostables) _____ (pounds)**TOTAL WEIGHT**

(Should agree with "Total weight" above.

Adjust weights to agree with total.)

_____ (pounds)



Appendix C: Equipment List

- Several large tarps
- 20 banquet tables – for the waste sorting
- 1 case of 60 gallon container liners
- 1 case of towels
- 1 roll of Visqueen plastic to cover tables
- 1 utility knife
- 2 rolls of duct tape
- 2 rolls of flagging tape – used to stake off areas
- 12 contractors stakes (wooden) – used to stake off areas
- 12 60-gallon Rubbermaid garbage containers – used to dispose of sorted waste/recycling
- 1 portable dumpster
- 15 3-gallon Rubbermaid buckets with handles – used to sort material
- 15 large steel salad tongs
- 15 clip boards
- 2 boxes of pencils
- 1 floor scale (electronic) – weighed to the hundredth of a pound
- Half dozen extension cords (electrical)
- Large floor mats – used to cover extension cords
- Extra recycling bins and garbage containers
- University tents (used all three)
- White boards with markers
- Lap-top computer
- Garbage on the Green banners and signs
- Name tags
- 500 Garbage on the Green T-shirts
- Personal Protection Equipment
 - 2 boxes of Nitrile gloves (puncture resistance and water proof)
 - 50 Barrier Gowns (TYVEK)
 - 1 box of TYVEK coveralls (100+ suits)
 - 2 boxes of shoe covers
 - 45 safety glasses
 - 1 sharps container/biowaste box
 - Sani-wipes

Appendix D: Volunteer Acknowledgement and Informed Consent Forms

- UNF General Counsel – Volunteer Acknowledgement and Informed Consent Form
- UNF General Counsel – Photographic and Other Medium Consent, Release, and Assignment Form

UNF GARBAGE ON THE GREEN

Volunteer Acknowledgment and Informed Consent

By my signature below, I acknowledge that as a volunteer for the March 8, 2007 UNF Garbage on the Green ("Activity"), I acknowledge, understand and accept the risks associated with my participation in the Activity and further that I agree to adhere to the Activity's requirements as set forth below.

The risks involved in this Activity include those that would be foreseeable in handling waste (garbage and trash) contained in waste receptacles from academic buildings, residence halls and food service facilities. As such, the specific risks include but are not limited to exposure to industrial and/or household solutions, agents, cleaners, etc. and contact with sharp objects including broken plastic, broken glass, cardboard, paper, food, razor blades, hypodermic needles or other objects that could puncture, cut, scrape or otherwise cause harm to the participant. Additionally, based on the nature of the objects to be handled or coming into contact with in the Activity there is a risk of exposure to blood borne pathogens and the potential for exposure to communicable diseases including but not limited to HIV, AIDS, Hepatitis, etc.

1. I acknowledge and agree that I am required to act in a reasonable manner at all times during the Activity.
2. I acknowledge and agree that I must observe all state and local laws and UNF regulations and policies, including those concerning alcohol/drug use and required conduct. I further acknowledge and agree that in the event that if I have any questions regarding the applicability of UNF's regulations and policies to the Activity, I will make any necessary inquiries to the Activity's organizers. I also acknowledge and agree that I must observe and comply with the specific rules and conditions developed for participation in the Activity by the Activity's organizers including the requirement to wear provided personal safety equipment (i.e.- eye wear, gloves, etc.). I further acknowledge and agree that I have been advised of the importance to routinely wash my hands upon removal of gloves during and at the completion of the Activity to avoid the spread of bacteria, germs, communicable diseases, etc.
3. I acknowledge and agree that it is my obligation to make any necessary inquiries to the Activity's sponsors regarding my ability, physically or otherwise, to safely participate in the Activity and that prior to executing this Acknowledgement, I have been provided the opportunity to inquire and discuss the possible risks and hazards to me resulting from my participating in the Activity. Any questions I had regarding my ability to participate in the Activity have been answered to my satisfaction, and I have received sufficient information to make a sound and voluntary decision to participate in the Activity.
4. I acknowledge and agree that there will be no emergency medical personnel at the Activity. I further acknowledge and agree that in the event I suffer an injury during the Activity, regardless of the severity, that I am required to immediately report any injury to the Activity Coordinator, Ms. Stacy Wheeler.

	Printed Name	Attended Orientation (Y/N)	Executed Photo Release (Y/N)	N Number	Status*	Signature Check-IN Signature Check-OUT
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

*Status: "Stu" = Student; "Fac" = Faculty; "Sta" = Staff; "Other"

UNIVERSITY OF NORTH FLORIDA
PHOTOGRAPHIC AND OTHER MEDIUM CONSENT, RELEASE AND ASSIGNMENT

**THIS AFFECTS YOUR LEGAL RIGHTS.
PLEASE READ CAREFULLY BEFORE SIGNING BELOW**

NOTE: If I am under eighteen (18) years of age, I understand that I am not permitted to execute this Release and Assignment without approval of my parent or legal guardian, who must execute this Release on my behalf.

I, _____, hereby grant to the University of North Florida Board of Trustees, a public body corporate (UNF), and those acting pursuant to its authority the absolute right and permission to:

- a. Record my participation and appearance on videotape, audiotape, film, photograph or any other medium.
- b. Use my name, likeness, voice and biographical material in connection with these recordings.
- c. Exhibit or distribute such recording in whole or in part without restrictions or limitation for any legal purpose, including without limitation educational or promotional purposes, which UNF, and those acting pursuant to its authority, deem appropriate.

I further grant to UNF the right to copyright such pictures and images in its own name or to publish, to market and to assign such pictures and images without further consideration, compensation or report to me.

I hereby waive any rights or interests that I might have in the pictures and images, including any rights to inspect and/or approve the finished photographs and images or the use of which the pictures and images may be applied so long as such use is lawful.

I, on behalf of myself, spouse, family, heirs, beneficiaries, and personal representatives, agree to release and forever discharge and covenant not to sue the University of North Florida Board of Trustees, the Florida Board of Governors, and the State of Florida, their officers, agents, employees, and representatives ("Releasees") from and against any and all liability for any and all claims, demands, actions, causes of action of whatever kind or nature, costs and expenses of any nature, including attorneys' fees ("Claims") that I may have or that may hereafter accrue to me, arising out of or related to any harm, loss, damage or injury, including but not limited to suffering, death or property loss that may be sustained by me, whether caused by my action or negligence or the action or negligence of Releasees or third parties.

I HAVE READ THE FOREGOING RELEASE AND ASSIGNMENT BEFORE SIGNING BELOW. I WARRANT THAT I AM 18 YEARS OF AGE OR OLDER AND FULLY UNDERSTAND THE CONTENTS OF THIS RELEASE.

Print name: _____ Signature: _____ Date: _____

Address: _____

City: _____ State: _____ Zip: _____ Telephone: _____

PARENT/GUARDIAN OF A MINOR

I HEREBY CERTIFY that I am the parent and/or guardian of _____, a minor under the age of 18 years, and in consideration of value received, the receipt of which is hereby acknowledged, I hereby consent that any photographs which have been or about to be taken by the photographer may be used by same for the purposes as set forth above, signed by the minor, with the same force in effect as if executed by me.

Print name: _____ Signature: _____ Date: _____

Address: _____

City: _____ State: _____ Zip: _____ Telephone: _____

Appendix E: State and Local Guiding Documents

- Florida Laws Addressing College/University Waste and Recycling: **Resource Recovery and Management**
- University of North Florida Policies Addressing Campus Waste and Recycling: **Final Master Plan, Section 9- General Infrastructure Element, Solid Waste Sub-Element**

Florida Laws Addressing College/University Waste and Recycling

The following section of the Florida State Code specifically addresses waste and recycling requirements of the State University System, as excerpted from Title XXIX (Public Health), Chapter 403 (Environmental Control), Part IV (Resource Recovery and Management).

URL: <http://www.leg.state.fl.us/Statutes/> (retrieved August 30, 2007)

403.714 Duties of state agencies.

(1) Each state agency, the judicial branch of state government, and the State University System shall:

- (a) *Establish a program*, in cooperation with the department and the Department of Management Services, for the collection of all recyclable materials generated in state offices and institutions throughout the state, including, at minimum, aluminum, high-grade office-paper, and corrugated [cardboard].
- (b) *Provide procedures for collecting and storing recyclable materials*, containers for storing materials, and contractual or other arrangements with buyers of recyclable materials.
- (c) *Evaluate the amount of recyclable material recycled* and make all necessary modifications to said recycling programs to ensure that all recyclable materials are effectively and practicably recycled.
- (d) *Establish and implement*, in cooperation with the department and the Department of Management Services, *a solid waste reduction program* for materials used in the course of agency operations. The program shall be designed and implemented to achieve the maximum feasible reduction of solid waste generated as a result of agency operations.

(5)(a): The Department of Education, in cooperation with the State University System and the department, shall *develop, distribute, and encourage the use of guidelines for the collection of recyclable materials and for solid waste reduction* in the state system of education. At a minimum, the guidelines shall address solid waste generated in administrative offices, classrooms, dormitories, and cafeterias.

University of North Florida Policies Addressing Campus Waste and Recycling

University of North Florida Policies that specifically address campus waste and recycling, as excerpted from the UNF 2005 -2015 Master Plan, Section 9 – General Infrastructure Element, Solid Waste Sub-Element and Section 13 - Conservation Element, are articulated below.

URL: <http://www.unf.edu/masterplan/final.html> (retrieved March 7, 2007)

Campus Master Plan, Section 9- General Infrastructure Element, Solid Waste Sub-Element:

Goal 4: UNF shall continue to ensure the adequate provision of solid waste handling and disposal capacity to meet current and projected University needs.

Policy 4.1.1 UNF shall establish and adopt a level of service standard of 8.4 pounds of solid waste per capita per day. Capita shall be defined as those persons residing on campus.

Policy 4.1.2 UNF shall continue to execute service contracts with private companies to provide solid waste handling and transporting service.

Policy 4.1.3 UNF shall continue to rely upon the City of Jacksonville for acceptable disposal facilities.

Objective 4.2 UNF shall reduce the solid waste stream from the University operations to the greatest practical extent.

Policy 4.2.1 UNF shall continue to promote recycling through periodic educational emphases for the student and employee bodies.

Policy 4.2.2 UNF shall maintain existing and secure additional recycling containers from the private vendor serving the University and place these strategically throughout the University's facilities for ease of use.

Campus Master Plan, Section 13 – Conservation Element:

Goal 1: UNF shall conserve, protect and provide for the appropriate management of its natural resources and conservation areas.

Policy 1.1.3 UNF shall continue to promote existing recycling programs that strive to support the programs at UNF presently funded and initiated by the City of Jacksonville. UNF shall encourage and support future recycling program initiatives sponsored by the University's students or faculty, where deemed appropriate.